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PATENT
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

On

December 16, 2005

TOWNSEND and TOWNSEND and CREW LLP

By:

Patricia Andrews

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Emil A. TanaghoRajvir
DahiyaTom F. Lue

Application No.: 10/052,889

Filed: January 18, 2002

For: ACELLULAR MATRIX GRAFTS:
PREPARATION AND USE

Customer No.: 20350

Confirmation No. 3329

Examiner: Prebilic, Paul B.

Technology Center/Art Unit: 3738

DECLARATION UNDER 37 C.F.R.
§1.132 OF DR. EMIL A. TANAGHO

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Emil A. Tanagho, being duly warned that willful false statements and the like are punishable by fine or imprisonment or both (18 U.S.C. § 1001), and may jeopardize the validity of the patent application or any patent issuing thereon, state and declare as follows:

1. All statements herein made of my own knowledge are true, and statements made on information or belief are believed to be true and correct.

2. I received Bachelor of Medicine and Bachelor of Surgery MB, Ch.B. from Alexandria University, Egypt in 1952. I received a Diploma in Urology from Alexandria University, Egypt in 1955. I received a Masters Degree in Surgery from Alexandria University, Egypt, in 1957. I served at the University of California, San Francisco as an Assistant Professor of Urology from 1967 – 1970, as an Associate Professor of Urology from 1970 – 1977, and as a Professor of Urology from 1977 – present. I served as a Chairman of the Department of Urology at the School of Medicine at the University of California, San Francisco from 1977 – 1997. In addition to my academic positions, I am a practicing specialist and researcher, and have been so since 1967. A copy of my curriculum vitae and biographical sketch are attached as Exhibit A.

3. The invention of the above-referenced patent application provides for the first time an organ-specific, insoluble elastic matrix graft for repair of ureter and urethra. This matrix graft is derived from donor's ureter or urethra smooth muscle tissue, is impermeable to urine, provides a scaffold for seeding of recipient's functional ureteral and urethral cells as it forms an intact framework of collagen and elastic fibers and permits recipient's cellular and muscular tissue to localize, germinate, and grow within such framework.

4. I am a named inventor on this patent application. I have read and am familiar with the contents of this patent application. In addition, I have read the Office Action mailed February 25, 2004, the Final Office Action mailed November 4, 2004, and the Office Action mailed June 17, 2005, for the present application. It is my understanding that the Examiner believes that the present invention is obvious in light of the Bishopric reference or the Goldstein reference or the Abraham reference, further in view of the Gregory reference.

5. This declaration is provided to demonstrate that: first, the cited references does not necessarily motivate or suggest to one of skill in the art to combine the teaching of these references; second, there is no reasonable expectation of success to arrive at the present invention by combining the teaching of the cited references; and third, the acellular matrix graft of the present invention has surprising properties that are not expected from combined reading of the cited references.

I. There Is No Motivation to Combine

6. The processes disclosed in the primary references (Bishopric, Goldstein, and Abraham) relate to an acellular collagenous matrix. The secondary reference (Gregory) relates

to elastin extraction and purification. Because of the distinct results achieved by the processes, one of skill in the art would not be motivated to combine these references.

7. The pending claims of this application are directed to a collagen/elastin matrix derived from ureter or urethra smooth muscles. Under a light microscope, collagen and elastin form a matrix of interwoven fibers. Under an electron microscope, both collagen and elastin individually form their own fibrous matrix. These two proteins have distinct characteristics and thus contribute to different aspects of the collagen/elastin matrix: collagen imparts strength and elastin imparts flexibility. Collagen, a fibrous protein consisting of a combination of types I, II, III, *etc.*, is readily solubilized by conditions that do not appreciably solubilize elastin. When present within a matrix, collagen derives its strength to a large extent from the length of the fibers. Furuto *et al.* (made of record with Applicants' response of May 3, 2005, as Exhibit 2) describe a preferred method of solubilizing collagens, where selective extraction of collagen involves using salt and diluted acid (*see, e.g.*, pages 43-44).

8. On the other hand, elastin and its purification procedures are described in the review articles by Rosenbloom (made of record with Applicants' response of May 3, 2005, as Exhibit 3) and Soskel *et al.* (made of record with Applicants' response of May 3, 2005, as Exhibit 4). According to Rosenbloom, the fibers of elastin are called elastic fibers, which are 90% elastin and 10% microfibrillar components. Soskel *et al.* also describe elastin as a "heavily cross-linked meshwork, perhaps best described as a fiber rather than as a protein. It is an infinitely large polymer" (*see, e.g.*, page 196). The flexibility of elastin is due to its extensive crosslinking between polypeptide strands.

9. In the present application, the claimed matrix is a collagen/elastin matrix that maintains its native strength and flexibility. This means that the fiber lengths and cross-linking have not been chemically altered to weaken the integrity of the matrix. The matrix is also intact in that it can retain urine and does not have rips or tears through which urine can pass.

10. The Examiner cited three primary references to form the basis of the obviousness rejection: the Bishopric, Goldstein, and Abraham references. Bishopric *et al.* describe a generic method for producing a collagen/elastin matrix from tissues, where the descriptions generally relate to body tissues, with focus on vascular tissues such as heart valves. This is the most apparent in the examples of this reference. Similarly, the Goldstein reference describes bioprosthesis derived from tissues following a decellularizing process involving enzymatic treatment. The specific tissue types discussed in this reference are skin and heart

valves, although the author does not limit his invention to these tissue types. The Abraham reference teaches the production of an acellular collagenous matrix using a chemical method. Again, Abraham *et al.* refer to the tissue types either in a general sense or naming specific types that do not include ureter or urethra.

11. The Examiner apparently took the position that this missing limitation, *i.e.*, deriving a collagen/elastin matrix from ureter or urethra smooth muscle tissue, can be found in the Gregory reference. The Gregory reference teaches methods for elastin extraction and purification from various sources, including ureter. This reference, however, describes its matrix as an "elastin matrix" rather than an "collagen/elastin matrix." As discussed above, elastin is *per se* a "matrix." There is no indication that the methods disclosed by Gregory are preserving the natural collagen/elastin matrix present in tissues such as in the ureter or urethra smooth muscles. For instance, the extraction conditions described in Gregory (column 5, lines 36-55) makes no allowance for preserving the collagen or microfibrillary components. Gregory describes the conventional methods for elastin extraction/purification, which call for acid and base treatment and/or use of heat. Under these conditions, collagen fibers will be severely damaged, if not completely solubilized. In fact, it is explicitly stated in EXAMPLE 3 (column 11, lines 46-58) that the elastin-based biomaterials produced according to the method taught therein "appear translucent, pearly white in color and collapsed when removed from water *indicating the absence of collagen* and other structurally supportive proteins" (emphasis added).

12. Because of the difference in purpose and in result of the methods taught by Bishopric, Goldstein, or Abraham and by Gregory, a person of ordinary skill in the art would not find any suggestion or motivation from these references to combine the limitations found in these references. As stated above, Gregory teaches extraction of elastin in a process far too harsh to preserve the intact collagen/elastin scaffolding. An artisan who sets out to prepare a bioprosthesis described by Bishopric, Goldstein, or Abraham would find no reason, either in the references or elsewhere, to combine the disclosure of Gregory, as the latter teaches the disruption of the collagenous network and would therefore defeat the purpose of preparing a implantable material having required structural integrity.

II. There Is No Reasonable Expectation of Success

13. Even if an artisan were somehow inspired to combine the teaching of Bishopric, Goldstein, or Abraham with the teaching of Gregory, and attempted to produce a collagen/elastin matrix derived from tissues other than those actually experimented by Bishopric,

Goldstein, and Abraham, there would be no reasonable expectation of success in achieving such a matrix with the properties as defined in the present application. This is because there exists significant difference in properties between ureter/urethra smooth muscle and other tissue types used in the methods described by Bishopric, Goldstein, or Abraham.

14. As far as the applicability of the disclosed methods is concerned, Bishopric, Goldstein, and Abraham appear to encompass a whole universe of tissue types. Yet, besides the certain tissue types that have been shown in the examples, these three references do not adequately address the feasibility of their methods in other tissues, particular those with special properties due to their distinct structure and functionality (*e.g.*, the properties of flexibility and water impermeability of the ureter and urethra) and the ability to serve as an organ-specific scaffold for a recipient's re-growth of the same organ's cellular content and muscular tissue. There is a large number of different types of tissues present in a human body, and that the tissues differ drastically in terms of strength, elasticity, and porosity of the cellular matrix. For instance, heart valves are a type of highly specialized tissue in that the tissue is nearly acellular except for a thin external layer of cells that can be readily removed by a variety of treatment methods to achieve a thick, dense, and relatively stiff matrix. In contrast, the intact matrix of smooth muscles such as that forms ureter or urethra provides a waterproof sheath with much higher flexibility. The matrix taught by Bishopric, Goldstein, or Abraham cannot substitute the matrix provided by the present disclosure, because the matrix of the present invention provides some important features that cannot be predicted or expected from the teaching of the cited references: first, the matrix of the present invention must be strong enough retain fluids without leakage, even when under pressure; second, the matrix must be flexible enough to accommodate changing fluid pressure; third, the matrix can be sutured without compromising its internal integrity or tearing when under pressure; and fourth, the matrix must be able to sustain growth of multiple cell types (muscle, epithelial, mucosal, and nerve) necessary to restore function to the repaired organ. These important features of the claimed collagen/elastin matrix will be discussed in detail below.

III. Unexpected Properties of the Claimed Collagen/Elastin Matrix

15. The collagen/elastin matrix of the present invention has been shown, in actual testing and use, to possess extraordinary properties that cannot be gleaned from the cited references. The inventors of this application have successfully accomplished the goal of making a matrix that has preserved the native collagen/elastin scaffolding and thus maintained the desired

strength and flexibility. This matrix has no antigenicity and readily permits cell repopulation into the collagen/elastin framework. These properties of the matrix as a tissue graft have been tested in numerous studies and the graft has consistently performed well. This is evidenced by Sievert *et al.* (made of record with Applicants' response of May 3, 2005, as Exhibit 5). Three additional publications by the present inventors provide further details in the surprisingly outstanding quality of the ureter/urethra-derived collagen/elastin matrix that allowed successful graft and long term use. The performance of the matrix is particularly remarkable in terms of recellularization and pressure profile (Dahms *et al.*, *Urology* 50:818-825, 1997; Sievert *et al.*, *J. Urol.* 163:1958-1965, 2000; and Sievert *et al.*, *J. Urol.* 165:2096-2012, 2001, made of record with Applicants' response of May 3, 2005, as Exhibits 6-8, respectively).

17. Furthermore, recent effort by the present inventors using the claimed matrix graft for repairing urethra in human patients has proven highly successful. In particular, the claimed invention was used by the inventor on a human subject to correct damaged urethral tissue. More recently, others have referred to the inventor's procedure and copied successfully on patients around the world. The attached eleven (11) slides (Exhibit B) describe some aspects of the procedure. Slide 1 shows the stenosed (damaged or strictured) urethral tissue that was replaced. Slide 2 shows an x-ray of the stenosed (damaged or strictured) segment of the urethra. Slide 3 shows a chart and numbers of the patient's urine flow before the operation. Slide 4 shows a sketch of the operation. Slide 5 shows the patient's pre-operation condition. Slide 6 shows the donor's (cadaveric) urethral tissue to be grafted into the patient, which donor's tissue was treated using the same process described in this patent application. Slide 7 shows the patient's urethral tissue to be removed. Slide 8 shows the cadaveric tissue of the appropriate size that was treated using the process described in this patent application to be grafted into the patient. Slide 9 shows the sutured donor's tissue implanted into the recipient. Slide 10 shows an x-ray of the grafted urethral tissue of the healthy recipient after the operation. Slide 11 shows a chart and numbers of the healthy recipient's normal urine flow after the operation. This surgical procedure typically involves exposing the stenosed urethral segment and splitting it open ventrally. The cadaveric accularized urethra is also split open and the appropriate length and width is prepared to be used as an onlay graft over the stenosed urethral segment using 50 absorbable sutures and all the wounds are then closed in the usual manner.

18. By contrast, a matrix produced from any randomly selected tissue type, including those that have been used by Bishopric, Goldstein, and Abraham, simply cannot be expected to achieve the exceptional properties of the matrix graft of the present invention, which

Declaration under 37 CFR 1.132 of Dr. Emil A. Tanagho

are essential for the successful repair of ureter or urethra. The combined teaching by Bishopric, Goldstein, and Abraham and the teaching by Gregory, does not show or suggest use of the accellularized tissue as an organ-specific scaffold for regrow of specific organs' cellular contents and muscular tissues.

19. In summary, it is my opinion that a person of skill in the art would not be motivated to combine the teaching by Bishopric, Goldstein, and Abraham and the teaching by Gregory, particularly because Gregory's method would defeat the purpose of preserving the native collagen/elastin matrix, which Bishopric, Goldstein, and Abraham appear to achieve. There is also no reasonable expectation of success, even if one does attempt to combine the teachings. This is due to the significant difference in functions and characteristics of different tissue types. In addition, the matrix graft of the present invention has been demonstrated to possess extraordinary properties that simply cannot be expected from combining the teaching of the references cited.

20. Declarant has nothing further to say.

Date:

12/5/05

By:

E. Tanagho

Emil A. Tanagho, M.D.

TOWNSEND and TOWNSEND and CREW LLP

Two Embarcadero Center, Eighth Floor

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Attachment (Exhibit A: Dr. Tanagho's resume; Exhibit B: slides 1-11)

CG/cg

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EXHIBIT A

BIOGRAPHICAL SKETCH

NAME		POSITION TITLE	
Emil A. Tanagho, M.D.		Professor	
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Faculty of Medicine, Alexandria University, Egypt	MB,Ch.B.	1952	Medicine
Faculty of Medicine, Alexandria University, Egypt	Dipl/Urol	1955	Urology
Faculty of Medicine, Alexandria University, Egypt	Master/Surg	1957	Urology

A. Positions and Honors

Professional Experience:

1967-70 University of California, San Francisco, Assistant Professor of Urology
 1970-72 University of California, San Francisco, Associate Professor of Urology
 1972- University of California, San Francisco, Professor of Urology
 1977-97 University of California, San Francisco, Chairman, Department of Urology
 1997-Present Professor, Department of Urology, University of California, San Francisco

Honors and Awards:

1988 Honorable Mention, Joseph F. McCarthy Essay Contest. Cavernous vein arterialization for vasculogenic impotence: An animal model. Western Section, American Urological Association; San Francisco.
 1989 State-of-the Art Lecture: "Surgical Anatomy of the Penis: Clinical Implications. Presented at the Western Section, American Urological Association, Scottsdale, Arizona.
 1990 Honorary Membership, German Urological Society and Honorary Fellow, German Urological Association
 1991 Second Place: Interstitial Cystitis: Abnormal nonadrenergic-non-cholinergic (NANC) neurotransmission in the bladder wall. Poster Contest: Western Section, American Urological Association, Vancouver, British Columbia
 1992 First Prize: Urodynamics Essay Contest: Intracellular mechanism of penile erection in monkeys. American Urological Association annual meeting, Washington, DC
 First Prize: Jack Lapidus Essay Contest: Reinnervation of the rat bladder with a somatic nerve and a striated muscle flap. American Urological Association annual meeting, Washington, DC
 First Prize: Urodynamics Essay Contest: Male urethral responses to electrostimulation and neuromuscular blockade: Correlation of regional differences with sphincteric and ejaculatory function. American Urological Association annual meeting, Washington, DC
 1993 Shared First Prize, Proctor and Gamble Resident Essay Competition. The latissimus dorsi muscle as a detrusor substitute: Functional recovery after nerve division and repair.
 1995 Grand Prize, Jack Lapidus Essay Contest: Baba, K., Yajima, M., Carrier, S., Nagaraju, P., Morgan, D.M., Akkus, E., Rehman, J., Nunes, L., Lue, T.F., and Tanagho, E.A.: Effect of testosterone on the number of NAÎPH-diaphorase staining nerve fibers in the rat corpus cavernosum and dorsal nerve.

B. SELECTED PUBLICATIONS

- Lue TF, Gleason CA, Brock GB, Carroll PR, Tanagho EA Intraoperative electrostimulation of the cavernous nerve: technique, results and limitations. *J Urol* 154:1426-8, 1995.
- Trigo-Rocha F, Martinez-Pineiro L, Donatucci CF, Hsu GL, Lue TF, Tanagho EA Sodium nitroprusside: physiologic effects as a nitric oxide donor in three species *Int J Impot Res* 1995 Mar;7(1):49-56, 1995.
- Trigo-Rocha F, Donatucci CF, Hsu GL, Nunes L, Lue TF, Tanagho EA The effect of intracavernous injection of potassium channel openers in monkeys and dogs. *Int J Impot Res* 7:41-8, 1995.
- von Heyden B, Riemer RK, Nunes L, Brock GB, Lue TF, Tanagho EA Response of guinea pig smooth and striated urethral sphincter to cromakalim, prazosin, nifedipine, nitroprusside, and electrical stimulation. *Neurourol Urodyn* 14:153-68, 1995.
- Kane CJ, Bolton DM, Connolly JA, Tanagho EA Voiding dysfunction in human immunodeficiency virus infections. *J Urol* 155:523-6, 1996.
- Dahms SE, Piechota HJ, Nunes L, Dahiya R, Lue TF, Tanagho EA Free ureteral replacement in rats: regeneration of ureteral wall components in the acellular matrix graft. *Urology* 50:818-25, 1997.
- Probst M, Piechota HJ, Hohenfellner M, Gleason CA, Tanagho EA Neurostimulation for bladder evacuation: is sacral root stimulation a substitute for microstimulation? *Br J Urol* 79:554-66, 1997.
- Probst M, Dahiya R, Carrier S, Tanagho EA Reproduction of functional smooth muscle tissue and partial bladder replacement. *Br J Urol* 79:505-15, 1997.
- Tanagho EA This month in investigative urology. Commentary on selective detrusor activation by electrical sacral nerve root stimulation in spinal cord injury. *J Urol* 157:1196, 1997.
- Dahms SE, Tanagho EA The impact of sacral root anatomy on selective electrical stimulation for bladder evacuation. *World J* 16:322-8, 1998.
- Thuroff JW, Chartier-Kastler E, Corcus J, Humke J, Jonas U, Palmtag H, Tanagho EA Medical treatment and medical side effects in urinary incontinence in the elderly. *World J Urol* 16 Suppl 1:S48-61, 1998.
- Dahms SE, Piechota HJ, Dahiya R, Lue TF, Tanagho EA Composition and biomechanical properties of the bladder acellular matrix graft: comparative analysis in rat, pig and human. *Br J Urol* 82:411-9, 1998.
- von Heyden B, Anthony JP, Brock GB, Kaula N, Tanagho EA The latissimus dorsi bladder myoplasty to assist detrusor function. *Urol Res* 26:215-21, 1998.
- Tanagho EA Urinary stress incontinence: surgical treatment. *Int Urogynecol J Pelvic Floor Dysfunct* 9:1-2, 1998.
- Piechota HJ, Dahms SE, Probst M, Gleason CA, Nunes LS, Dahiya R, Lue TF, Tanagho EA Functional rat bladder regeneration through xenotransplantation of the bladder acellular matrix graft. *Br J Urol* 81:548-59, 1998.
- Piechota HJ, Dahms SE, Nunes LS, Dahiya R, Lue TF, Tanagho EA In vitro functional properties of the rat bladder regenerated by the bladder acellular matrix graft. *J Urol* 159:1717-24, 1998.
- Peterson CA, Bennett AH, Hellstrom WJ, Kaiser FE, Morley JE, Nemo KJ, Padma-Nathan H, Place VA, Prendergast JJ, Tam PY, Tanagho EA, Todd LK, Varady JC, Gesundheit Erectile response to transurethral alprostadil, prazosin and alprostadil-prazosin combinations. *J Urol* 159:1523-7, 1998.
- Dahms SE, Piechota HJ, Dahiya R, Gleason CA, Hohenfellner M, Tanagho EA Bladder acellular matrix graft in rats: its neurophysiologic properties and mRNA expression of growth factors TGF-alpha and TGF-beta. *Neurourol Urodyn* 17:37-54, 1998.
- Piechota HJ, Gleason CA, Dahms SE, Dahiya R, Nunes LS, Lue TF, Tanagho EA Bladder acellular matrix graft: in vivo functional properties of the regenerated rat bladder. *Urol Res* 27:206-13, 1999.

- Nitahara KS, Aboseif S, Tanagho EA Long-term results of colpocystourethropexy for persistent or recurrent stress urinary incontinence. *J Urol* 162:138-41, 1999.
- Sievert, K-D, Bakircioglu, ME, Nunes, Chui, R., Dahiya, R., and Tanagho, EA. Homologue acellular urethral matrix for urethral reconstruction in the rabbit: Histological and functional evaluation. *J. Urol.* 163: 1958-1965, 2000.
- Probst, M., Piechota, HJ, Dahiya, R., and Tanagho, EA. Homologous bladder augmentation in dog with the bladder acellular matrix graft. *BJU Inter.* 85: 362-71, 2000.
- Sievert, KD, Wefer, J., Bakircioglu, ME, Nunes, L., Dahiya, R. and Tanagho, EA. Heterologous acellular matrix graft for reconstruction of the rabbit urethra: Histological and functional evaluation. *J. Urol.* 165: 2096-2102, 2001.
- Wefer, J., Sievert, KD, Schlote, N., Wefer, AE, Nunes, L., Dahiya, R., Gleason, CA, and Tanagho, EA. Time dependent smooth muscle regeneration and maturation in a bladder acellular matrix graft: histological studies and in vivo functional evaluation. *J. Urol.* 165: 1755-1759, 2001.
- Wefer J, Sekido N, Sievert KD, Schlote N, Nunes L, Dahiya R, Jonas U, Tanagho EA. Homologous acellular matrix graft for vaginal repair in rats: a pilot study for a new reconstructive approach. *World J Urol* 20(4):260-3, 2002.
- Wefer J, Schlote N, Sekido N, Sievert KD, Wefer AE, Nunes L, Bakircioglu ME, Dahiya R, Tanagho EA. Tunica albuginea acellular matrix graft for penile reconstruction in the rabbit: a model for treating Peyronie's disease. *BJU Int* 90(3):326-31, 2002.
- Cayan S, Chermansky C, Schlote N, Sekido N, Nunes L, Dahiya R, Tanagho EA. The bladder acellular matrix graft in a rat chemical cystitis model: functional and histologic evaluation. *J Urol* 168(2):798-804, 2002.
- Sievert KD, Gleason CA, Junemann KP, Alken P, Tanagho EA. Physiologic bladder evacuation with selective sacral root stimulation: sinusoidal signal and organ-specific frequency. *Neurourol Urodyn* 21(1):80-91, 2002.
- Youssif, M.E., Shiina, H., Nunes, L., Gleason, C., Chermansky, C., Dahiya, R., and Tanagho, E.A. Regeneration of bladder acellular matrix graft in a diabetic rat model. *J. Urol.* (In press.)

C. Research Support

Title: Regeneration of functional smooth muscle tissue

NIH / NIDDK RO1DK51101

Principal Investigator: Emil Tanagho, M.D. 01/01/2000-12/31/2004

The main goal of this project is to investigate the molecular mechanisms of regeneration of functional smooth muscle tissues using in vitro and in vivo models. We will also investigate the clinical trials for urethral stricture repair using organ specific acellular matrix.

This is current application for renewal.

NAME: Emil Abdelsayed Tanagho
CURRICULUM VITAE

NAME: Emil Abdelsayed Tanagho

Current Title and Dept. Professor of Urology
Department of Urology
School of Medicine
UCSF

<u>Dates Attended:</u>	<u>Institution & Location</u>	<u>Degrees Conferred</u>	<u>Major Subject</u>
1945-1946	Faculty of Science Alexander Univ., Egypt	146 P.C.N	Physics, Chemistry Botany, Zoology
	Alexandria Univ., Egypt Faculty of Medicine		
1952	M.B., Ch.B. Medicine		
1952-1953	Alexandria Univ. Hospitals Egypt	House Officer	---
1953-1954	Faculty of Medicine Alexandria Univ., Egypt	1954 Diploma of	General Surgery Surgery, Resident
1954-1955	Faculty of Medicine Alexandria, Egypt	1955 Diploma of Urology, Resident	Urology
1955-1957	Faculty of Medicine Alexandria Univ., Egypt	1957 Master of Surgery in Urology	Urology
1962-1963	Institute of Urology University of London	Research Urologist	Anatomical structure and physiological Function of The GU Tract
1963-1964	Department of Urology University of California San Francisco	Research Urologist	Continuation of studies in London

LICENSES, CERTIFICATES, ETC.:

Medical License, California: 1967

Certified, American Board of Urology (Field: Urology): 1974

PRINCIPAL POSITIONS HELD:

1957-1959	Univ. of Alexandria, Egypt	Clinical Demonstrator of Urology
1959-1962	Univ. of Alexandria, Egypt	Lecturer in Urology
1994	(see EDUCATION)	
1964-1966	Univ. of Alexandria, Egypt	Assistant Professor of Urology
1967-1970	Univ. of California, San Francisco	Assistant Professor of Urology
1970-1972	Univ. of California, San Francisco	Associate Professor of Urology

Emil A. Tanagho, MD

1972-present	Univ. of California, San Francisco	Professor of Urology
1976-1996	Univ. of California, San Francisco	Chairman, Dept. of Urology
1995-present	Veterans Admin, Medical Ctr, SF	Attending Physician
1996-present	Univ. of California, San Francisco	Professor, Dept. of Urology

ANCILLARY POSITIONS HELD CONCURRENTLY:

1967-present	San Francisco General Hospital	Courtesy Staff
1970-	Letterman Army Medical Center	Consultant in Urology
1970-present	Oakland Naval Hospital, Oakland	Consultant in Urology
1970-present	Ross General Hospital, Ross, CA	Courtesy Staff
1970-present	Marin General Hospital, Greenbrae	Courtesy Staff
1971-present	Children's Hospital, San Francisco	Courtesy Staff
1978-present	Veterans Admin. Medical Ctr., SF	Consultant in Urology
1978-1981	U.S. Public Health, San Francisco	Consultant in Urology
1978-present	Veterans Admin. Medical Center Palo Alto, CA	Consultant in Urology

HONORS AND AWARDS: (*Prizes awarded to research fellows. Dr. Tanagho is the Principal Investigator for the following research performed in the Urology Laboratory at the University of California School of Medicine, San Francisco).

Grand Prize for exhibit: Ureteral Orifice: Its Competence and Configuration. American Urological Association meeting; Miami, FL. 1968

Honorable Mention for exhibit Anatomy and Function of the Bladder Neck. AUA meeting, Miami, FL

Grand Prize for exhibit: Ureteral Orifice: Its Competence and Configuration. Western Section, AUA meeting; Seattle, WA 1968

Second Prize in Research: Western Section, AUA meeting, San Francisco, CA 1974s

First Prize in Research: Vesicoureteral Reflux - I. AUA meeting; St. Louis, MI

*First Prize in Laboratory Research: Studies on Vesicoureteral Reflexes: Urethral Sphincteric Responses to Detrusor Stretch.

Grayson Carroll Essay contest, AUA; St. Louis, MI

*Second Prize: (Same studies as above), Western Section, AUA; San Francisco, CA

*First Prize: Feasibility of inducing micturition through stimulation of sacral nerves. Miley B. Wesson Essay competition, AUA meeting, Chicago, IL 1977

*Third Prize, Laboratory Research: Motor Innervation of the Urinary Tract Studied by Retrograde Axonal Transport of Protein.

Grayson Carroll Essay contest, AUA meeting, Washington, D.C.

Decoration of Merit awarded by the Egyptian Government for contributions in medicine and research. 1978

*Third Prize in Research: Grayson Carroll Essay contest, AUA, Washington, D.C.

H.B. Atlee Lectureship, Dalhousie University; Halifax, Nova Scotia 1979

*First Prize, Laboratory Investigation (exhibit): Sacral Micturition Center (Identified by HRP Axonal Transport). Western Section, AUA meeting, Kona /Honolulu, HI 1980

First Prize, Round Table: Potential Use of Synthetic Absorbable Mesh in Urologic Surgery. Western Section, AUA meeting, Coronado, CA 1982

First Prize, Scientific Paper: The External Urinary Sphincter Revisited. Western Urologic Forum meeting; Santa Barbara, CA

*First Prize, Laboratory Research: Hemodynamics of Erection and Clinical Implications. AUA meeting; Las Vegas, NV 1983

*First Prize, Joseph F. McCarthy Essay Contest: Neuroanatomy of Penile Erection and Iatrogenic Impotence. Western Section, AUA; Vancouver, British Columbia

Honorable Member: Urological Society of Australia 1984

Jacob K. Javits Neurosciences Award 1985

*First Prize: Western Section, AUA; Anaheim, CA: Assessment of renal viability by phosphorus-31 magnetic resonance spectroscopy.

*Third Prize, Laboratory Research: AUA; Atlanta, GA (same studies as before)

*First Prize, Jack Lapidus Essay Contest: Clinical significance of sacral and pudendal nerve anatomy. 1986

*First Prize, Joseph F. McCarthy Essay Contest: Priapism: A refined approach to diagnosis and treatment. Western Section, AUA; Seattle, WA

*Shared First Prize, Miley B. Wesson Essay Contest: Assessment of renal preservation by phosphorus-31 magnetic resonance spectroscopy: In vivo normothermic blood perfusion. Western Section, AUA, Seattle, WA

*Shared First Prize, Miley B. Wesson Essay Contest: Assessment of Clinical renal preservation by phosphorus-31 magnetic resonance spectroscopy. Western Section, AUA; Seattle, WA

Emil A. Tanagho, MD

*Shared First Prize, Miley B. Wesson Essay Contest: Mechanism of venous occlusion during canine penile erection: An anatomic demonstration. Western Section, AUA; Seattle, WA

*Second Prize, Clinical Research: Assessment of clinical renal preservation by phosphorus-31 magnetic resonance spectroscopy. AUA; New York City

*Second Prize, Jean-Francois Ginestie Essay Contest: Mechanism of penile erection.

*Alken Prize: Mechanism of penile erection.

*Second Prize, Laboratory Research: Assessment of renal viability during unilateral ureteral obstruction by phosphorus-31 magnetic resonance spectroscopy. Part I: Experimental study in rats and canines. Western Section, AUA meeting, Kona, HI 1987

*Honorable Mention, Joseph F. McCarthy Essay Contest. Cavernous vein arterialization for vasculogenic impotence: An animal model. Western Section, AUA meeting; San Francisco, CA 1988

State-of-the-Art Lecture: "Surgical Anatomy of the Penis: Clinical Implications. Presented at the Western Section, AUA, Scottsdale, AZ 1989

Honorary Membership, German Urological Society

Honorary Fellow, German Urological Association 1990

*Second Place: Interstitial Cystitis: Abnormal nonadrenergic-non-cholinergic (NANC) neurotransmission in the bladder wall. Poster Contest: Western Section, AUA, Vancouver, British Columbia 1991

Honorary Membership in All-Union Association of Urology, USSR

First Prize: Urodynamics Essay Contest: Intracellular mechanism of penile erection in monkeys. 1992

First Prize: Jack Lapidus Essay Contest: Reinnervation of the rat bladder with a somatic nerve and a striated muscle flap.

First Prize: Urodynamic Essay Contest: Male urethral responses to electrostimulation and neuromuscular blockade: Correlation of regional differences with sphincteric and ejaculatory function. 1993

American Urological Association Achievement Award.

Shared First Prize, Proctor and Gamble Resident Essay Competition: The latissimus dorsi muscle as a detrusor substitute: Functional recovery after nerve division and repair. 1993

Grand Prize, Jack Lapidus Essay Contest: Baba, K, Yajima, M, Carrier, S, Nagaraju, P, Morgan, DM, Akkus, E, Rehman, J, Nunes, L, Lue, TF and Tanagho, EA: Effect of testosterone on the number of NADPH-diaphorase staining nerve fibers in the rat corpus cavernosum and dorsal nerve. 1995

Honorary Membership: Romanian Academy of Science, Buchaert, Romania 1996

Ramon Gutierrez Award, American Urological Association Annual Meeting, Atlanta, GA 2000

SIU/Yamanouchi Award 2000: Presented at the SIU 25th Congress, Singapore, October – November 2000.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:

1952-present	Egyptian Medical Association
1965-present	Fellow, American College of Surgeons
1970-present	American Medical Association
1971-present	California Medical Association
1971-present	San Francisco Medical Society
1972-present	Western Section, American Urological Association, Inc.
1975-present	American Academy of Pediatric
1975-present	Societe Internationale d'Urologie
1975-present	American Urological Association, Inc.
1975-present	Academia Mexicana de Cirugia
1976-present	International Urodynamic Society
1976-present	California Academy of Medicine
1976-present	International Continence Society
1977-present	Society of University Urologists
1977-present	Arab American Medical Association
1978-present	University Urologic Forum
1979-present	American Association of Genito-Urinary Surgeons
1979-present	Northern California Urological Society
1979-present	Western Urologic Forum
1981-present	Society for Pediatric Urology
1981-present	Urological Research Society

Emil A. Tanagho, MD

1982-present	Fellow, International College of Surgeons, United States Section
1983-present	World Medical Association (associate member)

HONORARY MEMBERSHIP

1984-present	Urologic Society of Australasia
1987-present	Royal Society of Medicine, G.B.
1989-present	Canadian Urological Association
1989-present	German Urological Association
1990-present	All-Union Association of Urology, USSR
1992-present	Czechoslovakia Urological Society
1994-present	Urologic Society of Japan
1996-	Romanian Academy of Science

PROFESSIONAL ACTIVITY

PROFESSIONAL ORGANIZATIONAL ACTIVITIES

1993	Postgraduate Instruction Committee, Western Section, AUA
1994	Chairman, Committee on Neurophysiology, Urodynamics Society
1993	Consultant to American Urological Association International Relations Committee

SERVICE TO PROFESSIONAL PUBLICATIONS

1973-present	Urology	Consulting Editor
1982-present	Journal of Urology	Assistant Editor
1982-present	Neurourology and Urodynamics	Editorial Board
1983-present	Today's Therapeutic Trends	Editorial Advisory Board
1983-present	Urologia Internationalis	Scientific Board
1985-present	The American Physiological Society	Consulting Editor

SCIENTIFIC AND PROFESSIONAL MEETINGS AND WORKSHOPS ATTENDED (Last 20 Years) INTERNATIONAL

1977

June	Visiting Professor: University of Mainz, Mainz, Germany
July	Visiting Professor: University of Alexandria and Univ. of Cairo, Egypt
	World Symposium for Pediatric Surgery, Barcelona, Spain
Nov	Guest Speaker: Association de Urologos de Puerto Rico, in San Juan, Puerto Rico

1978

June	Guest Speaker: International Urodynamic Seminar, Italy
Oct	Guest Speaker: Arab American Medical Association (First Medical Symposium in the Mideast), Baghdad, Iraq, Cairo and Alexandria, Egypt

1979

June	Guest Speaker: International Congress of Urology, Paris, France
	Visiting Professor: Pugivert Institute of Urology, Barcelona, Spain
	Guest Speaker: Chilean Urologic Society, Santiago, Chile
Oct	Invited Speaker: "Atlee Lectureship Speaker, University of Dalhousie, Halifax
Nov	Guest Speaker: International Urologic Symposium, Frankfurt, Germany

1980

Feb Attended: Western Urologic Forum annual meeting, Cancun, Mexico
April Visiting Professor: University of Sherbrooke, Sherbrooke, Canada
Guest Speaker: American Gynecological Society meeting, Montreal, Canada

June Visiting Professor: King Faisal Specialist Hospital, Riyadh, Saudi Arabia
July Visiting Professor: University of Alexandria, Alexandria, Egypt
Nov Visiting Professor: University of Manitoba, Winnipeg, Canada
Dec Visiting Professor: King Abdul Azia University, Jeddah, Saudi Arabia

1981

April Guest Speaker: Edmonton Society of Obstetricians and Gynaecologists, Edmonton, Alberta, Canada
May Guest Speaker: Annual Meeting of the Mexican Urological Society, Mexico, Mexico
June Pan American Andrology Society meeting, Cairo, Egypt
Oct Guest of Honor: Labat Laboratories, BPH Symposium, Paris, France
French Urological Society, Paris, France

1982

June Belgrade Congress of Urology (Yugoslavia)
Sept XIX Congress, Society Internationale d'Urologie (San Francisco)
(President; Papers, Posters)

1983

Sept Guest Speaker: 2nd Joint Meeting, International Urodynamics and Continence Societies (Aachen, Federal Republic of Germany)
Guest Speaker: 3rd International Congress of Pediatric Urology (Florence, Italy)
Oct Guest Speaker: XVII Congress of the American Confederation of Urology (Cartagena, Columbia)
Nov Guest Speaker: IV Overseas Symposium, Arab American Medical Association (Kuwait)

1984

March Invited Lecturer: Pan Pacific Surgical Association (Sydney, Australia)
April Invited Lecturer: Urologic Society of Australasia (Melbourne, Australia)
June Invited Lecturer: International Symposium – Practical Aspects of Urinary Incontinence (Nijmegen, The Netherlands)

1985

June International Society of Urology, Vienna, Austria
Symposium Internationale d'Urologie (Willy Gregoir), Brussels, Belgium
Pediatric Urology Conference, Florence, Italy

1986

March Visiting Professor: University of Amsterdam
Visiting Professor: Le Greffon Intestinal en Urologie, Nechar Hospital, Paris, France
Nov Guest Speaker: III International Symposium on Urology (Madrid Spain)

1987

Feb Visiting Professor: Leiden, Holland

Emil A. Tanagho, MD

June Guest Speaker: 52nd Annual Belgium Urologic Society Meeting (Brussels, Belgium)
6th Annual Urologic Research Society Meeting (Dublin, Ireland)
Visiting Professor: Royal Society of Medicine, (London, England)

1988

June Visiting Professor: III International Congress on Biostimulation
III International Course in Urologic Surgery, Copanello, Catanzaro, Italy
Sept Visiting Professor: Bratislava, Czechoslovakia
Oct Societe Internationale d'Urologie, Buenos Aires, Argentina

1989

Jan Visiting Professor: Vienna School of Medicine, Vienna, Austria
Guest Speaker at the Austrian Urologic Society
Feb Visiting Professor: McGill University, Quebec, Canada
March Guest Speaker: Third International Congress in Nijmegen, The Netherlands
June Guest Speaker: Canadian Urological Association, Quebec, Canada
Guest Speaker: 21st Annual Congress of the Societe Internationale d'Urologie, Buenos Aires, Argentina
Aug Lecture: International Symposium on Andrology, Sao Paulo, Brazil
Oct Guest Speaker: Annual German Urologic Association meeting in Freiburg, Germany

1990

Jan Co-chairman and guest speaker: Second Urological Research Forum, Okinawa, Japan
March Invited Guest Speaker: Seventh Reconstructive Surgery Seminar on Organ Preservation and Function Restoration in Urologic Oncology, Erice, Sicilia, Italy
April American Urological Association Northeast Section Seminar, Montreal, Canada
May Teaching Session for Neuroprosthesis Multicenter Clinical Trials in Hannover, Germany
June Visiting Professor: Alexandria Armed Forces Hospital in Egypt
Oct Guest Speaker: IV Congress of the All-Union Association of Urology, Moscow

1991

Aug Honored Guest Speaker: International Federation for Hydrocephalus and Spina Bifida-Stockholm, Sweden
Sept Beijing International Symposium, Beijing, China
Nov SIU Congress, Seville, Spain

1992

Mar-Apr Speaker: Australia Urological Society, Adelaide, Australia
July WUF/CA Urologic Forum, Antigua, Guatemala
Aug-Sept International Continence Society Meeting, Halifax, Nova Scotia, Canada
Oct 27th Annual Meeting – Egyptian Urological Association, Alexandria, Egypt Societe Internationale D'Urologie- 10th Annual Meeting, Lille, France

1993

Jan Alexandria Armed Forces Hospital, Alexandria, Egypt
March Western Urologic Forum, Manzanillo, Mexico
June Canada Urologic Association, Montreal, Canada
Oct Postgraduate Course "Madrid 93", Madrid, Spain
Dec International Symposium of Uro-Gynecology, Sao Paulo, Brazil

Emil A. Tanagho, MD

1994

Jan "Journées de Propara," Montpellier, France
June Visiting Professor, Innsbruck, Austria
Sept Societe Internationale D'Urologie, Sydney, Australia Post-Congress Seminar in Singapore
Oct International Symposium of Pediatric and Pediatric Surgery, Madrid, Spain

1995

March Western Urologic Forum, Puerto Vallarta, Mexico
Sept German Urological Association, Hamburg, Germany
Nov 25th Brazilian Congress (speaker), Bahia, Brazil

1996

Feb. Urodynamic Meeting, Wuppertal, Germany
July Guest faculty for Behavioral and Cognitive Neurosciences (BCN) meeting, University of Groningen, Holland
August Chen Kung University Medical College, Tainan, Taipei Taiwan
Sep Guest Speaker: Operative Techniques Seminar, German Society of Urology
Dec Egyptian Society Meeting, Cairo, Egypt and Visiting Consultant at Alexandria Army Medical Center.

1997

May American Medical Association: Cutting Edge of New Advances in Medicine.
July NIH SEP meeting, Washington, DC
August International Symposium on Voiding Disorders in the Elderly
Kassel, Germany
WHO Consensus Conference on Urinary Incontinence in the Elderly
Sep Urologic Research Society, Quebec, Canada and SIU meeting
October Speaker at the Thirty-second annual meeting of Egyptian Urologic Society, Alexandria, Egypt
Nov 45th Kimbrough Urologic Seminar

1998

May Watterson lecturer: Applied Neural Control in Biomedical Engineering
Case Western University
Promoter for PHD Thesis on the Organization of the central control of micturition, Groningen University, Holland

Emil A. Tanagho, MD

June 1st International Consultation on Incontinence, Monaco – President.

Sept National Arab American Medical Association, Newport Beach, CA

Nov NIH SEP meeting.

1999

March International Symposium on Voiding Dysfunction, Ankara, Turkey

April Visit: Strasborg, Brussels, London, Prague and Hamburg as AUA and EAU scholarship preferred leader for 2000

June NIH Urology Study Section meeting.

July NIH Urology Study Section meeting.

2000

Sept Ghanera Armed Forces Hospital, Cairo, Egypt

October 5th Asian International Urology Seminar, Beijing, China

Societe Internationale de Urology, SIU meeting in Singapore

August Invited speaker at 5th Asian Urology Congress, Beijing China.

NATIONAL-

American Urological Association (1982-2000)

Urodynamics Society (1982-2001)

NIH Workshop on Neuroprosthesis (1982-1996)

American Association of Genitourinary Surgeons (1982-2000)

Kimbrough Urological Society (1983, 1989)

Urological Research Society (1984, 1985, 1986, 1987, 1989, 1991, 1992, 1996-98)

REGIONAL

Western Section, American Urological Association (1982-2000)

Western Urologic Forum (1976-2000)

Northern California Urology Residents seminar (1982-2000)

INVITED PAPERS, LECTURES, PRESENTATIONS (Last 20 Years)

University Urology Forum Meeting, San Diego, CA

Stanford University, Stanford, CA

Guest Speaker 1977

Visiting Professor 1977

50th Annual Meeting of Wisconsin Urologic Society
Milwaukee, WI&

Guest Speaker 1977

Visiting Professor 1977

Orange County Urologic Society, Anaheim, CA

Guest Speaker 1977

Postgraduate Course on Urodynamics, NY, NY

Guest Speaker 1977

Emil A. Tanagho, MD

Cornell University, Ithaca, NY	Visiting Professor	1977
Radiology Postgraduate Course	Guest Speaker	1978
University of California, SF, CA		
Oregon Urologic Society	Guest Speaker	1978
Gynecological Urological Seminar, Torrance, CA	Guest Speaker	1978
Nephrology Grand Rounds, UCSF	Guest Speaker	1978
OB-GYN Annual Seminar, Univ. of CA, SF, CA	Guest Speaker	1978
University of Oregon, Eugene, OR	Visiting Professor	1978
White Memorial Hospital (Roger Barnes Visiting Professor, Loma Linda, University, Los Angeles, CA	Visiting Professor	1978
Nurses, University of California, San Francisco		
San Francisco, CA	Guest Speaker	1979
OB-GYN Postgraduate Course		
Los Angeles, CA	Guest Speaker	1979
Gynecologic Urology Seminar, Los Angeles, CA	Guest Speaker	1979
Gyn-Urology Course New York, NY	Guest Speaker	1979
Tri-County Urologic Society, Santa Barbara, CA	Guest Speaker	1979
Bay Area Urology Group, Presbyterian Hosp. San Francisco, CA	Guest Speaker	1979
AUA Seminar on Female Urology, Cherry Hill, NJ	Guest Speaker	1979
ACOG Meeting, San Diego, CA	Guest Speaker	1979
Greater Miami Urologic Society, Miami, FL	Guest Speaker	1979
Pediatric and Adult Urology Seminar, Univ. of Miami, FL	Guest Speaker	1979
St. Louis Urologic Society, St. Louis, MI	Guest Speaker	1979
University of California, Los Angeles & Long Beach, Long Beach, CA	Visiting Professor	1979
Spinal Cord Injury Seminar, Birmingham, AL	Guest Speaker	1979
Stanford University, Stanford, CA	Visiting Professor	1979
ACOG Meeting, San Diego, CA	Guest Speaker	1980
Greater Miami Urologic Society, Miami, FL	Guest Speaker *	1980
University of Miami, Miami, FL	Visiting Professor	1980
Pediatric and Adult Urology Seminar	Guest Speaker	1980
St. Louis Urologic Society, St. Louis, MI	Guest Speaker	1980
University of Alabama, Birmingham, AL	Visiting Professor	1980
Spina Cord Injury Seminar, Birmingham, AL	Guest Speaker & Participant	1980
Stanford University, Stanford, CA	Visiting Professor	1980
Postgraduate Course on Gynecologic Urology	Guest Speaker	1981
Los Angeles, CA		
Fresno Urologic Society, Fresno, CA	Guest Speaker	1981
American College of Obstetrics & Gynecology	Guest Speaker	1981
Phoenix, AZ		
American Association of Genitourinary Surgeons	Participant	1981
Phoenix, AZ		
American Urological Association Meeting, Boston, MA	Participant	1981
Urology Postgraduate Seminar San Francisco, CA	Participant	1981
NIH Neuroprosthesis Workshop	Participant	1981
Washington, DC		
AUA Subject-Oriented Seminar, Palo Alto, CA	Participant	1981
Obstetrics & Gynecologic Society of Maryland, Baltimore, MD		
Gynecologic Urology Postgraduate Course, Phoenix, AZ	Guest Speaker	1982
GU Surgeons Meeting, Palm Springs, CA	Guest Speaker	1982
Western Urologic Forum, Santa Barbara, CA	Participant	1982
American Urological Association Meeting, Kansas City, MI	Participant	1982
Urodynamic Society Meeting	Participant	1982

Emil A. Tanagho, MD

National Medical Association	Guest Speaker	1982
Annual Neuroprosthesis Workshop, Washington, DC	Participant	1982
Western Section American Urological Association meeting Coronado, CA	Participant	1982
Annual Advanced Seminar on Urological Surgery San Francisco, CA	Participant	1982
Annual Northern California Residents' Seminar	Participant	1982
Obstetrics and Gynecological Society of Maryland Baltimore, MD	Lecture	1982
Postgraduate course, Phoenix, AZ	Lecture	1982
National Medical Association, San Francisco, CA	Lecture	1982
	Guest Speaker	1983
University of Texas, Houston, TX	Visiting Professor	1983
Houston Urologic Society	Guest Speaker	1983
University of California, San Francisco, Dept of Radiology	Guest Speaker	1983
Maricopa Medical Center, Phoenix, AZ	Guest Speaker	1983
6 th Annual Urologic Seminar		
Eastern Virginia Graduate School of Medicine Norfolk, VA	Visiting Professor	1983
American Paraplegic Society, Las Vegas, NV	Guest Speaker	1983
29 th Annual Society Meeting		
Gynecologic Urology Society, New Orleans, LA	Guest Speaker	1983
University of Leiden, The Netherlands	Visiting Professor	1983
	Visiting Professor	1987
Western Urologic Forum	Lecture/Panel	1984
San Antonio, Texas and St. Louis, MI		
Orange County Urologic Society, Anaheim, CA	Guest Speaker	1984
Los Angeles Urological Society, Los Angeles, CA	Guest Speaker	1984
University of New South Wales, Sydney Australia	Visiting Professor	1984
Duke University Medical Center, Durham, NC	Lecture	1984
4 th Annual Urological Research society		
National Taiwan University, Taipei, Taiwan	Visiting Professor	1984
Chinese National University, Hong Kong	Visiting Professor	1984
Western Urologic Forum, Palm Springs, CA	Lecture	1985
The American Association of Genitourinary Surgeons San Diego, CA	Lecture	1985
Special Program, Urology Update, Kansas City, MI	Guest Speaker	1985
31 st Annual Seminar		
Mt. Sinai Medical Center, New York, NY	Visiting Professor	1985
University of Alberta, Edmonton, Alberta, Canada	Visiting Professor	1985
American Urological Association, Atlanta, GA	Lecture	1985
University of Amsterdam, Amsterdam, Netherlands	Visiting Professor/ Guest Speaker	1986
	Visiting Professor	1986
Nechar Hospital, Paris, France	Visiting Professor	1986
Johns Hopkins University, Baltimore, MD	Visiting Professor	1986
	Guest Speaker	
University of Minnesota, Minneapolis, MN	Visiting Professor/ Guest Speaker	1986
	Guest Speaker	1987
Symposium on Female Urology, New York, NY	Visiting Professor	1987
University of Washington, Seattle, WA	Visiting Professor	1987
University of Texas, Dallas, TX	Visiting Professor	1987
Royal Society of Medicine, London, England	Visiting Professor	1987
University of Leuven, Brussels, Belgium	Visiting Professor	1987
Spinal Cord Injury Society, Seattle, WA	Guest Speaker	1987

Emil A. Tanagho, MD

University of Phoenix, Phoenix, AZ	Visiting Professor	1987
General Urologic Association, Kassel Germany	Guest Speaker	1987
20 th Annual Urodynamic Seminar, Hanover, Germany		
University of Buffalo, New York, NY	Visiting Professor	1988
Mayo Clinic, Rochester, MN	Visiting Professor	1988
6 th International Congress on Biostimulation	Guest Speaker	1988
Bratislava, Czechoslovakia	Visiting Professor	1988
21 st Annual Congress of the Societe Internationale d'Urologie, Buenos Aires, Argentina	Speaker	1988
University of South Carolina, South Carolina	Visiting Professor	1988
(Kenneth M. Lynch, Jr. Memorial	Visiting Professor)	
Vienna School of Medicine, Vienna, Austria	Visiting Professor	1989
Austrian Urologic Society	Guest Speaker	1989
McGill University, Quebec, Canada	Visiting Professor	1989
Third International Congress in Nijmegen	Guest Speaker	1989
The Netherlands		
Cleveland Clinic, Cleveland, Ohio	Visiting Professor	1989
Western Section, American Urological Association	Lecture	1989
Scottsdale, AZ		
American Urological Association annual meeting	Lecture	1989
Dallas, TX		
Canadian Urological Association, Quebec, Canada	Speaker	1989
International Symposium on Andrology, Sao Paulo, Brazil	Faculty/Lecture	1989
Annual German Urologic Association meeting	Guest Speaker	1989
Freiburg, Germany		
Western Urologic Forum, Cairo, Egypt	Participant	1989
Kimbrough Meeting, San Antonio, TX	Guest Speaker	1989
Second Urological Research, Okinawa, Japan	Visiting Professor	1990
Western Urologic Forum, Palm Springs	Speaker	1990
International Course on Urologic Oncology	Guest Speaker	1990
Oncology, Erice, Sicily, Italy		
AUA Northeast Section Seminar, Montreal, Quebec	Guest Speaker	1990
GU Surgeons Meeting, Monterey, CA	Speaker	1990
International Urologic Seminar, UCSF Postgraduate Course, San Francisco, CA	Program Chair	1990
American Urological Association, New Orleans, LA	Speaker	1990
University of Hannover, Hannover, Germany	Visiting Professor	1990
Alexandria Armed Forces Hospital, Alexandria, Egypt	Visiting Professor	1990
Western Section, AUA, Monterey, CA	Speaker	1990
All-Union Association of Urology, Moscow, USSR	Speaker	1990
State University of New York, Brooklyn, NY	Speaker	1990
"Journadas Urologicas - Alfredo Borjas", Caracas, Venezuela	Guest Speaker	1990
Grand Teton Urological Conference Sponsored by Teton Urological Society, Jackson Hole, WY	Participant	1991
Western Urologic Forum, Ojai, CA	Participant	1991
GU Surgeon's meeting, Naples, FL	Participant	1991
AUA Annual meeting, Toronto, Canada	Participant	1991
Scott Symposium, Houston, TX	Guest Speaker	1991
International Federation for Hydrocephalus and Spina Bifida, Stockholm, Sweden	(Honored) Guest)	1991
Beijing International Symposium, Beijing, China	Invited Speaker	1991
American Academy of Pediatrics, New Orleans, LA	Participant	1991

Emil A. Tanagho, MD

SIU Congress, Seville, Spain

Australia Urological Society, Adelaide, Australia	Participant	1991
Western Urologic Forum Participant, Scottsdale, AZ	Invited Speaker	1992
GU Surgeons meeting, Hot Springs, VA	Invited Speaker	1992
Urologic Research Society meeting, Hilton Head, NC	Speaker	1992
Scott & White Department of Surgery	Participant	1992
Centennial Celebration, Temple, TX	Guest Speaker	1992
Western Section – AA Annual Meeting, Kihei, HI	Participant	1992
Multicenter Clinical Trial meeting, Indiana University	Participant	1992
Alexandria Armed Forces Hospital, Alexandria, Egypt	Participant	1993
Northwestern University Medical School, Chicago, IL	Visiting Professor	1993
Western Urologic Forum, Manzanillo, Mexico	Participant	1993
Genitourinary Surgeons meeting, Phoenix, AZ	Participant	1993
Annual American Urological Association, San Antonio, TX	Participant	1993
Canadian Urologic Association, Montreal, Canada	Invited Speaker	1993
University of Iowa, Iowa City, Iowa	Visiting Professor	1993
Voiding Dysfunction Update, San Francisco, CA	Guest Lecturer	1993
Neuroprosthesis Workshop, NIH, Bethesda, MD	Participant	1993
Postgraduate Course “Madrid 93”, Madrid, Spain	Invited Speaker	1993
International Symposium of Uro-Gynecology, Sao Paulo, Brazil	Invited Speaker	1991
“Journées,” Montpellier, France	Speaker	1994
Western Urologic Forum, Napa, CA	Participant	1994
Genitourinary Surgeons meeting, Boca Raton, FL	Participant	1994
AUA annual meeting, San Francisco, CA	Participant	1994
Innsbruck, Austria	Visiting Professor	1994
San Diego County Urological Society	Guest Speaker	1994
University of California, San Diego, San Diego, CA	Visiting Professor	1994
World Meeting on Impotence, Singapore	Participant	1994
Societe Internationale D’Urologie, Sydney, Australia	Speaker	1994
Post-Congress Seminar, Singapore	Speaker	1994
International Symposium of Pediatric and Pediatric Surgery, Madrid, Spain	Speaker	1994
Annual Pediatric Urology Seminar	Attended Meeting	1994
Edward B. Cantor Symposium on Urinary Incontinence, Cedars-Sinai Medical Center	Speaker	1994
Western Urologic Forum meeting, Puerto Vallarta, Mexico	Participant	1995
NIDDK Review Committee, Baltimore, MD	Participant	1995
Clinical Trials Study Meeting, Baltimore, MD	Participant	1995
Cedars-Sinai Medical Center, Los Angeles, CA	Speaker	1995
German Urological Association, Hamburg, Germany	Speaker	1995
Neural Prosthesis Workshop, Bethesda, MD	Participant	1995
Alexandria Armed-Forces Hospital, Alexandria, Egypt	Visiting Professor	1995
Urodynamic Meeting, Wuppertal, Germany	Visiting Professor	1996
University of Florida, Gainesville, FL	Visiting Professor	1996
University of Louisville, Louisville, KY	Guest Prof. Speaker	1996
University of Groningen, Holland	Guest Faculty	1996
Cheng Kung University Medical College	Speaker	1996
Tainan, Taipei, Taiwan		
German Society of Urology	Guest Speaker	1996
Mauer Sklodowska-Curie Children’s Hospital, Buchaert Romania	Visiting Professor	1996
Alexandria Urologic and Egyptian Urologic Society meeting in Cairo, Egypt	Attended Meeting	1996
Western Urologic Forum and Egyptian Urologic	Attended Meeting	1997

Society, Alexandria, Egypt		
Annual Pediatric Urology Seminar	Attended Meeting	1997
NIH Special Review Panel, Genitourinary Surgeons meeting	Participant	1997
American Urological Association annual meeting	Speaker	1997
National Arab American Medical Assn., Palm Desert, CA	Speaker	1997
Western Urologic Forum, Sedona, AZ	Participant	1997
NIH SEP Meeting, Washington, DC	Participant	1997
International Symposium on Voiding Disorders /Elderly, Kassel, Germany WHO Consensus Conference on Urinary Incontinence in the Elderly	Speaker	1997
Urologic Research Society, Quebec, SIU meeting, Montreal, Canada	Speaker	1997
Western Section, American Urological Association, Salt Lake City, Utah	Speaker	1997
Thirty-Second Annual Meeting of Egyptian Urologic Society, Alexandria, Egypt	Speaker	1997
Kimbrough Seminar	(Guest Speaker)	1997
Annual Advanced Seminar in Urology Surgery, SF, CA	Speaker	1997
Alexandria Forces Hospital, Alexandria, Egypt	Visiting Professor	1998
Genitourinary Surgeons Meeting Bladder Research Congress, San Francisco, CA	Participant	1998
Case Western Reserve University Watterson Cleveland, Ohio	Lecturer	1998
Croningen University, Holland	Promoter for Ph.D. Thesis	1998
Beaumont Hospital, Royal Oak, Michigan	Visiting Professor	1998
21 st Morita Lecturer	Guest Speaker	1998
A.A.M.A. Los Angeles, CA	Guest Speaker	1998
Jesuit Ravier Hospital, Los Angeles, CA	Visiting Consultant	1998
Western Section, American Urological Association	Participant	1998
NIH SEP meeting	Participant	1998
International Symposium on Voiding Dysfunction	Speaker	1998
Alexandria Army Hospital, Alexander, Egypt	Visiting Professor	1999
Alexandria, Egypt		
A.A.G.U.S., Naples, Florida	Participant	1999
NIH Urology Study Section Meeting	Participant	1999
NIH Urology Study Section Meeting	Participant	1999
Western Section, AUA, Monterey, CA	Participant	1999
Invited /Strasbourg, Brussels, London, Prague & Hamburg	Invited Guest	2000
American Urological Association, Atlanta, GA	Participant	2000
Western Urologic Forum	Participant	2000
Visiting Professor Alexandria Army Hospital, Alexandria, Egypt	Invited Guest	2000
	Invited Guest	2000
5 th Asian International Urology Congress, Beijing, China	Guest Speaker	2000
AUA Western Section Annual Meeting, Palm Desert, CA	Participant	2000
27 th Northern California Urology Resident Seminar	Participant	2001
Genitourinary Surgeons meeting, San Francisco, CA	Participant	2001

INVITED SPEAKER, POSTGRADUATE AND CONTINUING EDUCATION COURSES
(Last 10 Years)

1983

Emil A. Tanagho, MD

March	Annual course on Uroradiology, sponsored by Department of Radiology, UCSF (Codirector) San Francisco, CA
Oct	Advanced Seminar in Urologic Surgery: "Endourology" (Program Chairman), San Francisco, CA
Dec	American Urological Association Videoconference: "Endourology" (Moderator/Workshop Director) San Francisco, CA
 1984	
Jan, Feb, Aug	Advanced Seminar in Urologic Surgery: "Endourology" (Program Chairman), San Francisco, CA
Oct	Advanced Seminar in Urologic Surgery: "Advances in Urologic Oncology" (Program Chairman, Session Moderator), San Francisco, CA
 1985	
April	Urologic Update: 31 st Annual Seminar, University of Missouri, (lecture): "Problems of Management in Female Urinary Incontinence." Kansas City, Missouri
Oct	Advanced Seminar in Urologic Surgery: "Update on Impotence and Infertility" (Program Chairman, Session Moderator), San Francisco, CA
 1986	
March	Uroradiology Course: "Advances in Uroradiology-Impact on Our Practice" (Course Director, Speaker), San Francisco, CA
April	Obstetrics and Gynecology Postgraduate Course: "A Tutorial in Gynecologic Surgery", San Francisco, CA
Oct	Annual Advanced Urology Seminar in Urologic Surgery "Neurourology and Urinary Stone Management" (Program Chairman), San Francisco, CA
 1987	
March	Annual course on Uroradiology, sponsored by Department of Radiology, UCSF
March	4 th Annual Pediatric Urology Seminar, San Francisco, CA
Oct	Annual Advanced Seminar in Urologic Surgery, "Erectile Impotence 1987/Urologic Use of Bowel" (Program Chairman), San Francisco, CA
 1988	
March	Annual course on Uroradiology, sponsored by Department of Radiology, UCSF, "Controversies in Uroradiology"
Sept	Annual Advanced Seminar in Urologic Surgery, "Urologic Oncology" (Program Chairman), San Francisco, CA
Oct	Fifth Annual Pediatric Urology Seminar, San Francisco, CA
 1989	
Feb	Attended and moderated UCSF Postgraduate Course "Ultrasound in Urology"
Sept	Sixth Annual Pediatric Urology Seminar, San Francisco, CA
Oct	Urology Postgraduate Course, "Reconstructive Urology", San Francisco, CA
 1990	
March	Attended and participated in Postgraduate Course on "Voiding Dysfunction and Urinary Incontinence", Laurel Heights Conference Center, UCSF.
April	Program Chairman: Postgraduate Course "International Urologic Seminar" San Francisco, CA "Neural Stimulation in Urology: Clinical Applications" Panel Discussion
 1991	
Jan	Changes in the Treatment of BPH, UCSF Urology Grand Rounds, San Francisco, CA

Emil A. Tanagho, MD

Oct	Program Chairman: Annual Advanced Seminar in Urologic Surgery "Urologic Oncology", San Francisco, CA	
1992		
Sept	Annual Advanced Seminar in Urologic Surgery, "Benign Prostatic Hyperplasia and Prostatic Cancer, Program Chairperson, San Francisco, CA	
1993		
Oct	Annual Advanced Seminar in Urologic Surgery, "Technical Innovations in Urology," Program Chairman, San Francisco, CA Annual Pediatric Urology Seminar, UCSF, San Francisco, CA	
1994		
April	BPH Update, Seminar, UCSF, San Francisco, CA	
Nov	Annual Advanced Seminar in Urologic Surgery, "Technical Innovations in Urology, Program Chairman, San Francisco, CA	
1995		
March	Northern California Residents Seminar, Stanford University, Stanford, CA	
July	Update on Urinary Incontinence, Seminar, UCSF, San Francisco, CA	
Oct	Annual Postgraduate Course, Fairmont, San Francisco, CA	
Nov	"Pelvic Organ Prolapse and Urinary Incontinence" (Speaker) Grand Hyatt, San Francisco, CA	
1996	Annual Advanced Seminar in Urologic Surgery. Attended, Speaker Innovations in Urologic Surgical Techniques San Francisco, CA	
	VII World Meeting on Impotence San Francisco, CA	Attended
1997	Annual Advanced Seminar in Urologic Surgery Strategies in Office-Based Urology San Francisco, CA	Attended
	Annual Pediatric Urology Seminar San Francisco, CA	Attended
1998	International Bladder Research meeting San Francisco, CA	Attended
	UCSF Annual Advanced Seminar in Urologic Surgery	Attended
	Practical Issues in Human Sexuality and Erectile Dysfunction	Attended
1999	Annual Pediatric Urology Seminar San Francisco, CA	Attended
2000	Annual Pediatric Urology Seminar San Francisco, CA	Attended
2001	Annual Advanced Seminar in Urologic Surgery	Moderator

Emil A. Tanagho, MD

Laparoscopic Urologic Surgery

UNIVERSITY SERVICE

Campus Wide

1978-	Cancer Education Committee
1979-present	Chancellor's Committee (to review Continuing Education policy)
1978-present	Representative Assembly of the Academic Senate
1979-present	Executive Medical Board
1988-present	Tenure Committee
1988-present	Dean's Executive Committee

SCHOOL: (School of Medicine)

1972-1973	Ambulatory Care Committee
1976-present	Operating Room Committee, Medical Staff
1977-1984	Ad Hoc Peer Review Committee, Committee on Academic Personnel of the Divisional Academic Senate
1979-present	Executive Medical Board
1978-present	Clinical Department Chairmen's Committee
1983-present	Clinical Review Committee
1979-present	Professional Services Committee
1984-present	DRG Planning Committee (planning for Medicare prospective payment)
	Physician and Staff Education subcommittee
1994	VIP Action Committee

DEPARTMENTAL: (Urology Department)

1979-present	Faculty Advisory Committee
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OTHER:

1976-present	Membership Committee, Veterans Administration Medical Center, San Francisco
1980-present	Student Health Service Inpatient Consultant Panel

TEACHING:

Dr. Tanagho is actively involved in both undergraduate and postgraduate teaching.

UNDERGRADUATE:

Core Curriculum 110: Dr. Tanagho gives about one-fourth of this course, 8 hours and out of 32 hours. He also teaches the same course at San Francisco General Hospital for undergraduate students every eight weeks. He supervises and teaches students in clerkships during their rotation through the Urology Department.

POSTGRADUATE:

Graduate teaching for residents and housestaff. Biweekly conferences on uro-radiology for four hours each month, one conference monthly on pediatric urology for two hours, one conference monthly on physiopathology of the urinary system, a conference every

Emil A. Tanagho, MD

month on operative urology, several conferences and presentations during grand rounds, weekly teaching conferences with residents for two hours, ongoing teaching for residents and house staff and ward rounds, x-ray discussions, and teaching in operating room.

Postgraduate teaching also involves two or three research fellows on a constant basis in our urology laboratory. Over the last 19 years, Dr. Tanagho has trained the following research is:

Satsuo Masaki, MD	Japan	1963
Tadao Nijima, MD	Japan	1964
Alexander Cass, MD	Australia	1967-68
Guy Drouin, MD	Canada	1967-68
Bismal Masih, MD	India	1968-69
Reginald Lloyd-Davis, MD	England	1969-70
Erick Schick, MD	Canada	1970-71
John T. Cangelosi, MD	Italy	1971
Michael Mayo, MD	England	1971-72
James Mooney, MD	United States	1971-72
Tado Endo, MD	Japan	1971-72
Guy Laurent, MD	Canada	1971-72
Peter Graber, MD	Switzerland	1973
Udo Jonas, MD	Germany	1973-74
Lawrence Jones, MD	United States	1973-74
Irwin Kuzmarox, MD	Canada	1974-75
Homero Bruschini, MD	Brazil	1975-75
John Heine, MD	United States	1975-76
Nikitas Kokotas, MD	Greece	1975-76
Seiichi Orikasa, MD	Japan	1975-76
Richard A. Schmidt, MD	Canada	1975-78
Ross Witherow, MD	England	1976-77
Jan van Gool, MD	Netherlands	1976-77
Istvan Dobsa, MD	Denmark	1977-78
Shokrolah Shojaei, MD	Iran	1978-79
R. Wayne Paquin, MD	England	1978-79
Paulo Gonzales, MD	Brazil	1979-80
Carlos Gomes de Araujo, MD	Brazil	1979-80
Shahabaddin Safavi, MD	Iran	1979-80
Victor Ching, MD	China	1980
Joachim W. Thuroff, MD	Germany	1980-81
Mahmoud A. Bazeed, MD	Egypt	1980-81
Tom F. Lue, MD	Taiwan	1981-82
Takao Takamura, MD	Japan	1981-82
Matadeen Umraiya, MD	India	1981-82
Tetsuo Matsumoto, MD	Japan	1981-83
Salim J. Zeineh, MD	Lebanon	1982-83
Shinn-Nan Lin, MD	Taiwan	1983
Luigi Vercesi, MD	Brazil	1983
Regine Brissot, MD	France	1983
Assaad M. Mounzer, MD	Lebanon	1983-84
Bozo Kralj, MD	Yugoslavia	1983-84
Drago Milutinovic, MD	Yugoslavia	1983-84
K. Peter Juenemann, MD	Germany	1984-85
Mohamed Abozeid, MD	Egypt	1984-85
Tarek Aly, MD	Egypt	1985
Jianan Luo, MD	China	1985-86
Ju Ton Hsieh, MD	Taiwan	1985-86
Stefan C. Muller, MD	Germany	1986-87
Sherif Raouf G. Abo-Seif, MD	Egypt	1986-88

Emil A. Tanagho, MD

Charlotta Persson, MD	Sweden	1986-87
Jan Breza, MD	Czechoslovakia	1986-87
Hiromichi Ishikawa, MD	Japan	1986-87
K. Peter Juenemann, MD	Germany	1986-87
Jonathan Jarow, MD	USA	1987
Chii-Jye Wang, MD	Taiwan	1987
Sheren Ragi, MD	Egypt	1987
Wolfgang Diederichs, MD	Germany	1987-88
Benard Francois, MD	Canada	1987-88
R.J.L. Bosch, MD	Netherlands	1987-88
Nobuhisa Ishii, MD	Japan	1987-88
Andreas Mersdorf, MD	Germany	1987-88
Georg Christian Steif, MD	Germany	1987-88
Yoshiatsu Takahashi, MD	Japan	1987-88
Chii-Jye Wang, MD	Tawain	1987-88
Yu Cheung Ho, MD	China	1988
Rainer Opsomer, MD	Belgium	1988
Walter Stackl, MD	Austria	1988
Andreas Floth, MD	Austria	1989
Klaus Matzel, MD	Germany	1989
Jesus Mendoza, MD	Mexico	1989
Kazukiyo Miura, MD	Japan	1989
Jun Kyu Suh, MD	Korea	1989
Ashok Batra, MD	Philadelphia	1989-90
Keith Jarvi, MD	Canada	1990
Bernard March, MD	France	1990
Walter Thon, MD	Germany	1990
Markus Hohenfellner, MD	Germany	1990-91
Alex Castanheira, MD	Brazil	1991
Craig Donatucci, MD	USA	1991
Reynaldo Gomez, MD	Chile	1991
Rainer Hoffman, MD	Germany	1991
Kwang Myung Kim, MD	Korea	1991
Jae-Seung Paick, MD	Korea	1991
Flavio Trigo-Rocha, MD	Brazil	1991-92
Luis Martinez-Pineiro, MD	Spain	1991-92
Burkhard vonHeyden, MD	Germany	1991-92
Francisco Cappellano, MD	Italy	1992
Geng-Long Hsu, MD	China	1992
Wilhelm Hubner, MD	Austria	1992
Silvio Tucci, MD	Brazil	1992
Gerald Brock, MD	Canada	1991-93
Peter Zvara, MD	Czechoslovakia	1992-93
David King, MD	Taiwan	1993
Nam Kour, MD	Malaysia	1993
Shang Sen Lee, MD	Taiwan	1993
Michitaka Yajima, MD	Japan	1993
Emre Akkus, MD	Turkey	1993-94
Katsuyuki Baba, MD	Japan	1994
Guy Bogaert, MD	Germany	1994
Damien Bolton, MD	Australia	1994
Serge Carrier, MD	Canada	1994
Michael Probst, MD	Germany	1994-96
Hans-Juergen Piechota, MD	Germany	1995-96
Su-Tsung Huang, MD	China	1995-96
Gyung-Woo Jung, MD	China	1996

Emil A. Tanagho, MD

Chun C. Hsu, MD	China	1996-97
Ahmed I. El-Sakka, MD	Egypt	1996-98
Stefan E. Dahms, MD	Germany	1997
Joerg Wefer, MD	Germany	1999-2000
Noritoshi Sekido, MD	Japan	1999-2000
Sela Cayan, MD		2000
Chris Chermansky, MD	USA	2000
Masaki Yamanaka, MD	Japan	2001
Norbert Schlote, MD	Germany	2001
Mohammed Youssef	Egypt	2001

Several of these are currently heads of departments or leading urologists all over the world.

FORMAL SCHEDULED CLASSES FOR UCSF STUDENTS (Academic Years – 1981-82; 1982-83; 1983-84; 1984-85; 1985-86; 1987-88; 1988-89; 1989-90; 1990-91)

<u>Quarter</u>	<u>Academic Yrs.</u>	<u>Course # & Title</u>	<u>Nature of Contribution</u>	<u>Units</u>	<u>Class size</u>
Su,F,W, Sp	1981-1988	Core Clerkship: Surgery 110	Lectures	1-12	8-10
Su,F,W,Sp	1981	Urology 104.01: Clinical Clerkship	Guide students working as interns in Urology	1-1/2 week	1-02
Su,F,W,Sp	1981-1988	Urology 140.02: Clinical Clerkship	Guide students working as interns in Urology	1-1/2 week	1-02
F,W,Sp	1981-1988	Urology 170.01: Fundamentals of Urology	Training students in advanced urologic problems, techniques	2	1
F,W,Sp	1981-1988	Urology 199: Laboratory Project in Urology	Assist students in urologic laboratory procedures	1-5	1
Su,F,W,Sp	1981-1988	Urology 400: Seminar	Lectures on basic sciences and urologic Roentgenology	1	10-15
Su,F,W,Sp	1981-1988	Urology 401 Exp. Laboratory	Training in experimental investigation of urologic problems	2	22-03
Su,F,W,Sp	1981-1988	Urology 402	Discuss diagnosis and treatment of patients in urology wards	2	10-15
Su,F,W,Sp	1981-1988	Urology 403: General Staff conference	Discuss advances in basic urologic problems	1-1 1/2	35-40
Su,F,W,Sp	1981-1988	Urology 450	Supervision of residents in in- and outpatient week wards and clinics	1-1 1/2	1

POSTGRADUATE COURSES SPONSORED BY UCSF (Last 10 Years)

1982	Ext. Program Medical Education	Attended
1983	Department of Radiology	Co-Director and Guest Speaker
	Advanced Seminar in Urologic Surgery: "Endourology"	
	Advanced Seminar in Urologic Surgery	Program Chairman

1984	"Endourology"	Program Chairman
	Advanced Seminar in Urologic Surgery	
	"Endourology"(Jan, Feb, Aug)	Co-Chairman
	Advanced Seminar in Urologic Surgery	
1985	"Advances in Urologic Oncology"	
	Pediatric Urology	
	Advanced Seminar in Urologic Surgery	Program Chairman, Session
	"Update on Impotence and Infertility"	Moderator
1986	Pediatric Urology	
	Uroradiology: "Advances in Uroradiology"	Course Director, Speaker
	Impact on Our Practice"	
	Obstetrics & Gynecology" A Tutorial in	Attended
1987	Gynecologic Surgery and Anatomy"	
	Annual Advanced Seminar in Urologic	Program Chairman
	"Neurourology and Urinary Stone	
	Management"	
1988	Pediatric Post-Graduate Course	
	Erectile Impotence 1987/Urologic	Program Chairman
	Use of Bowl	
	Urologic Radiology	
1989	Urologic Oncology	Program Chairman
	Fifth Annual Pediatric Postgraduate Course	
	UCSF Postgraduate Course	Moderator
	"Ultrasound in Urology"	
1990	Sixth Annual Pediatric Postgraduate Course	Attended, Speaker
	Urology Postgraduate Course	Program Chairman
	"Reconstructive Urology"	
	Postgraduate Course "Voiding Dysfunction	Speaker
1991	and Urinary Incontinence	
	Postgraduate Course "International Urologic	Program Chairman
	Seminar	
	Female Urology and Urinary Infection	Program Chairman
1992	UCSF Postgraduate Course	Attended, Speaker
	"Changes in the Treatment of BPH	
	Annual Advanced Seminar in Urologic Surgery	Program Chairman
	"Urologic Oncology"	
1993	Annual Advanced Seminar in Urologic	Program Chairman
	Surgery "Benign Prostatic Hyperplasia and	
	Prostatic Cancer	
	Annual Advanced Seminar in Urologic	Program Chairman
1994	Surgery "Technical Innovations in Urology"	
	Annual Pediatric Urology Seminar, UCSF	Speaker
	BPH Update, Seminar, UCSF	Speaker
	Annual Advanced Seminar in Urologic	Program Chairman
1995	Surgery "Technical Innovations in	
	Urology, '94", UCSF	
	Update on Urinary Incontinence	Attended, Speaker
	"Anatomy of the lower urinary tract"	
	"Surgical treatment of stress incontinence"	
	"Bladder stimulator: A powerful tool, UCSF,	

Emil A. Tanagho, MD

San Francisco, CA

1996	Annual Advanced Seminar in Urologic Surgery Innovations in Urologic Surgical Techniques San Francisco, CA	Attended, Speaker
	VII World Meeting on Impotence San Francisco, CA	Attended
1997	Annual Advanced Seminar in Urologic Surgery Strategies in Office-Based Urology San Francisco, CA	Attended
	Annual Pediatric Urology Seminar San Francisco, CA	Attended
1998	International Bladder Research meeting San Francisco, CA	Attended
	UCSF Annual Advanced Seminar in Urologic Surgery	Attended
	Practical Issues in Human Sexuality and Erectile Dysfunction	Attended
1999	Annual Pediatric Urology Seminar San Francisco, CA	Attended
2000	Annual Pediatric Urology Seminar San Francisco, CA	Attended
2001	Annual Advanced Seminar in Urologic Surgery Laparoscopic Urologic Surgery	Moderator

INFORMAL TEACHING

1982-present	Reading routine x-rays	Discuss cases with residents
1982-present	Surgical techniques	Teaching residents in O.R.

PREDOCTORAL STUDENTS SUPERVISED:

1982 Arthur Aronson, Allan Lavee, Scott Sircus, Cereda Giovanna, Brad Thomas, Robert White, Kathleen Kennedy, Bruce Barrows, Jeff Luban, Gary Kaplan
1983 Debbie Vilinsky, William Bilotta, Joseph Presti, Hans Geisse, Leslie Glass, Craig Hoffman, Michaela Hurth, Gary Lattimer, Michael Saloman, Harvey Samowitz, Kenneth Yonemura, Brad Evans, Karl Weingartner
1984 Mark Avon, Donald Pang, Robert Terry, Nabil Abudayeh, Petra Schoop-Gussman, David Schull, Philip Serbin, William Wilson, Udayshanker Poonamallee
1985 Alain Munier, Kevin O'Connor, Howard Lippman, Alex Lin, Joseph Ruiz
1986 Paul-Heinz Lagen, Paul Strattle, Curtis Dunshee, Rami Akheass
1987 Donna Thompson, Brent Sholar, Reynaldo Hernandez, Stuart J. Wolf, David Arango, Petra Maier, Michael Law, Susanne Krege, Patrick Lee, Deborah Levine, Hans Vogelsang, Timothy Dresselhous, Ira Garde

Emil A. Tanagho, MD

1988 Constance Caldwell, Tanh Van Pham, David Persing, Andrea Williams, Ulf Schmidt, James Glauber, Ines Graber, Debra Koutnick, Daniel Douglas, Patrick Butler, Anthony Steimle, Andreas Amerhauser, Debbie Dennis, Francis Felix, Christine Adolff, Raymond Rackley, Anthony J. Shaheen, Roy Steers, Richard Kuno

1989 Richard Kuno, Eldan Eichbaum

1990 Brian Nessim, Kenneth Grullon, Blake Hamilton, Todd T. Kingdom, Evan Vapnek, Quan H. Nguyen, Jose Fuentes

1991 Evan Vapnek, Ramin Khalili, Gary E. Lemack, Quan H. Nguyen Tracey Banks, Michael Kaplan, Robert Savala, Michael J.

Meuth, Aaron Spitz, Steven Lerman, Aria Olumi

1992 Ketan Kapadia, John Amory, Christian Pavlovich, Laura Goetzl, Samuel T. Chan, Winona Tan

1993 Jorn Humke, Steven Roberto, David Nudell, Mario Robinson, Brian Grady, Michael Lawrence, Robert Schwab

1994 Martin Burchardt, Jin-Hu Kim

1995 Vera Maria Dorst, Sabine Klages, Norbert Schlote

1997 Vida Tigrani

1998 Kord Honda, Sangtae Park, Keith Lee

1999 Vladislav Frenk, Brian Golden

2000 Adam Levinson, Wendy Siu, Robert Cadotte, Roman Heuer, Sarah Janssen, Oliver Glawion, Darlene Lin, Karin Pohl, Khalid Aslam, Josiah Hawkins, Wilko I Staiger, Susan L. Logan, Howard H. Kim

POSTDOCTORAL FELLOWS SUPERVISED:

See TEACHING – Postgraduate

OTHER TEACHING AIDS PREPARED:

The book Smith's General Urology, now in its 15th edition (1999), edited by Dr. Tanagho with Dr. Jack McAninch, also contains several chapters written by Dr. Tanagho. The anatomy and physiology of the urinary system common urogenital problems, and current advances in diagnostic and operative techniques are discussed. It is being used as a textbook for 3rd year medical students in Core Curriculum-Surgery 110.

Dr. Tanagho's book, Female Urinary Incontinence (edited with Mr. Stuart Stanton) is now in its second edition.

In 1988, Contemporary Management of Impotence and Infertility was published by Williams and Wilkins. Dr. Tanagho edited this work, along with Drs. Tom Lue and R. Dale McClure.

In 1989, Problems in Urology was published in J.B. Lippincott, edited by Dr. Tanagho and devoted to Genitourinary Pain.

TEACHING ACTIVITY SUMMARY:

Dr. Tanagho is actively involved in our teaching program. He lectures on a regular basis to our third year medical students during their Surgery 110 course, and is closely involved with the many international postgraduate fellows who request to come and work with him on research projects in our lab. He has trained a great many of them over the years. Each month Dr. Tanagho is involved in regularly-scheduled urology conferences given to the residents and housestaff. He supervises residents and housestaff in the urology clinic two days a week. He is always available to the residents for one-on-one teaching while studying and evaluating patients and he scrubs with the residents in surgery on a regular basis for extensive teaching while operating. Dr. Tanagho is highly regarded by all of them as a knowledgeable and skillful teacher and clinician. His teaching hours totalled approximately 144 hours per month and 1725 hours per year.

RESEARCH AND CREATIVE ACTIVITY

ORIGINAL ARTICLES: [*Research performed in the Urology Laboratory; Dr. Tanagho, Principal Investigator]

1962

AR Sadr and EA Tanagho: Reparative surgery bilharzial ureteric stricture. Alexandria Med J 8:254-280(May).

EA Tanagho: Bilharzial polyposis. Alexandria Med J 8:389-402 (July).

1963

EA Tanagho and RCB Pugh: The anatomy and function of the ureterovesical junction. *Br J Urol* 35:151-165 (June).

1964

EA Tanagho: The bladder substitute, a review. *Alexandria Med J* 10:1-22.

EA Tanagho and MM Al-Ghorab: Conservative surgery of huge renal calculi. *Alexandria Med J* 10:75-79.

EA Tanagho and MM Al-Ghorab: Surgery of solitary kidney. *Kasir-El-Aini J Surg* 5:275-288.

1965

EA Tanagho and JA Hutch: Primary reflux. *J Urol* 93:158-164 (Feb).

EA Tanagho, JA Hutch, FH Meyers and ON Rambo, Jr: Primary vesicoureteral reflux: Experimental studies of its etiology. *J Urol* 93:165-176 (Feb)

JA Hutch and EA Tanagho: Etiology of non-occlusive ureteral dilation. *J Urol* 93:177-184 (Feb).

RP Lyon and EA Tanagho: Distal urethral stenosis in little girls. *J Urol* 93:379-387 (March).

EA Tanagho and FH Meyers: Trigonal hypertrophy: A cause of ureteral obstruction. *J Urol* 93:678-683 (June).

1966

EA Tanagho and DR Smith: The anatomy and function of the bladder neck. *Br J Urol* 38:54-71.

EA Tanagho, ER Miller, FH Meyers and RK Corbett: Observations on the dynamics of the bladder neck. *Br J Urol* 38:72-84.

EA Tanagho, JA Hutch and ER Miller: Diagnostic procedures and cinefluoroscopy in vesico-ureteral reflux. *Br J Urol* 38:435-444 (Aug).

1968

EA Tanagho FH, Meyers and DR Smith: The trigone: Anatomical and physiological consideration. I. In relation to the ureterovesical junction. *J Urol* 100:623-632 (Nov).

EA Tanagho, DR Smith and FH Meyers: The trigone: Anatomical and physiological considerations. II. In relation to the bladder neck. *J Urol* 100:633-639 (Nov).

EA Tanagho and DR Smith: Mechanism of urinary continence. I. Embryologic, anatomic and pathologic consideration. *J Urol* 100:640-646.

1969

EA Tanagho, DR Smith, FH Meyers and R Fisher: Mechanism of urinary continence. II Technique for surgical correction of incontinence. *J Urol* 101:305-313.

EA Tanagho, TH Guthrie and RP Lyon: The intravesical ureter in primary reflux. *J Urol* 101:824-832 (June).

RE Fisher, EA Tanagho, RP Lyon and WH Tolley: Urethral calibration in newborn girls. *J Urol* 102:67-69 (July).

EA Tanagho and FH Meyers: The "internal sphincter": Is it under sympathetic control? *Invest Urol* 7:79-89 (July).

EA Tanagho, FH Meyers and DR Smith: Urethral resistance: Its components and implications. I. Smooth muscle component. *Invest Urol* 7:136-149 (Sept).

RP Lyon, S Marshall and EA Tanagho: The ureteral orifice: Its configuration and competency. *J Urol* 102:504-509 (Oct).

Emil A. Tanagho, MD

EA Tanagho, FH Meyers and DR Smith: Urethral resistance: Its components and implications. II. Striated muscle component. Invest Urol 7:195-205 (Nov).

1970

EA Tanagho and ER Miller: Initiation of voiding. Br J Urol 42:175-183 (April).

RP Lyon, S Marshall and EA Tanagho: Theory of maturation: A critique. J Urol 103:795-800 (June).

EA Tanagho, DR Smith and TH Guthrie: Pathophysiology of functional ureteral obstruction. J Urol 104:73-88 (July).

EA Tanagho: Surgical revision of the incompetent ureterovesical junction: A critical analysis of techniques and requirements. Br J Urol 42:410-424.

FO Belzer, SL Kountz, JS Najarian, EA Tanagho and F Hiinman, Jr.: Prevention of urological complications after renal allotransplantation. Arch Surg 101:449-452 (Oct).

1971

EA Tanagho, ER Miller, RP Lyon and R Fisher: Spastic striated external sphincter and urinary tract infection in girls. Br J Urol 43:69-82 (Feb).

EA Tanagho: Ureteral tailoring. J Urol 106:194-197 (Aug).

1972

EA Tanagho: Mechanics of ureteral dilation. Canad J Surg 15:4-14 (Jan).

EA Tanagho: Reflux: Why it occurs and what to do about it. Med World News Urology 1972:53-54 (April).

EA Tanagho and DR Smith: Clinical evaluation of a surgical technique for the correction of complete urinary incontinence. J Urol 107:402-411. [Trans Am Assoc Genitourin Surg 63:103-112, 1971].

EA Tanagho: Anatomy and management of ureteroceles. J Urol 107:729-736 (May).

*EA Tanagho: Surgically induced partial urinary obstruction I the fetal lamb. I. Technique. Invest Urol 10:19-24.

*EA Tanagho: Surgically induced partial urinary obstruction in the fetal lamb. II Urethral obstruction. Invest Urol 10:25-34.

*EA Tanagho: Surgically induced partial urinary obstruction in the fetal lab. III. Ureteral obstruction. Invest Urol 10:35-52.

EA Tanagho and ER Miller: Abnormal voiding and urinary tract infection. Int Urol Nephrol 4(2):165-173.

1973

E Schick and EA Tanagho: Effect of gravity on ureteral peristalsis. J Urol 109:187-191.

*EA Tanagho: Intrauterine fetal ureteral obstruction. J Urol 109:196-203.

*EA Tanagho and ER Miller: Functional considerations of urethral sphincteric dynamics. J Urol 109:2273-278.

*E Schick and EA Tanagho: Vesicorenal reflexes: Nervus and humoral factors. Urology 2:463-467.

1974

*PF Alpert and EA Tanagho: Colonic conduits: Experimental and clinical studies of reflux and ascending infection. Invest Urol 11:336-341.

EA Tanagho: Simplified cystography in stress incontinence. Br J Urol 46:295-302.

Emil A. Tanagho, MD

*P Graber, G Laurent and EA Tanagho: Effect of abdominal pressure rise on the urethral profile: An experimental study on dogs. Invest Urol 12:57-64.

*U Jonas and EA Tanagho: Reduced bladder capacity: Cause of ureterovesical reflux. Urology 4:421-425.

EA Tanagho: Meningomyelocele: Urologic considerations. West J Med 121:292-296.

SM Rudy and EA Tanagho: Transient neurogenic bladder secondary to presacral abscess. Association with regional ileitis. Urology 4:593-595.

*U Jonas and EA Tanagho: Electrical stimulation of sacral root in dogs to initiate urination. (F.) J Urol Nephrol 80:

*U Jonas, LW Jones and EA Tanagho: Comparative study of sacra medullary stimulation and stimulation of detrusor in dogs. (Fr) J Urol Nephrol 80:293.

1975

*U Jonas and EA Tanagho: Vesicoureteral reflux induced by reduction in bladder capacity. Experimental study. (Fr) J Urol Nephrol 81:723.

DG Linker and EA Tanagho: Complete external sphincterotomy in the male: Anatomic correlation to endoscopic appearance. J Urol 113:348-352.

*U Jonas and EA Tanagho: Studies on vesicourethral reflexes: I. Urethral sphincteric responses to detrusor stretch. Invest Urol 12:357-373.

*U Jonas, LW Jones and EA Tanagho: Recovery of bladder function after spinal cord transection. J Urol 113:626-628.

EA Tanagho: Case against incorporation of bowel segments into closed urinary system. J Urol 113:796-802.

P Graber and EA Tanagho: Urethral response to autonomic nerve stimulation. Urology. 6:52-58.

*U Jonas, JP Heine and EA Tanagho: Studies on the feasibility of urinary bladder evacuation by direct spinal cord stimulation. I. Parameters of most effective stimulation. Invest Urol 13:142-150.

*U Jonas, JP, Heine and EA Tanagho: Studies on the feasibility of urinary bladder evacuation by direct spinal cord stimulation. II. "Post-stimulus" voiding: A way to overcome outflow resistance. Invest Urol 13:151-153.

*U Jonas, LW Jones and EA Tanagho: Spinal cord stimulation versus detrusor stimulation. A comparative study in six "acute" dogs. Invest Urol 13:171-174.

1976

*U Jonas and EA Tanagho: Studies on vesicourethral reflexes. II. Urethral sphincteric responses to spinal cord stimulation. Invest Urol 13:278-285.

*U Jonas and EA Tanagho: Voiding pressure as it relates to outlet and/or sphincteric resistance. Invest Urol 13:372-374.

LW Jones, U Jonas, EA Tanagho and JP Heinz: Urodynamic evaluation of a chronically implanted bladder pacemaker. Invest Urol 13:375-379.

EA Tanagho: Embryologic basis for lower ureteral anomalies: A hypothesis. Urology 7:451-464.

EA Tanagho: Surgical repair of urethroepile deformity in male epispadias. BR J Urol 48:127-134.

U Jonas, LW Jones and EA Tanagho: Controlled electrical bladder evaluation via stimulation of the sacral micturition center or direct detrusor stimulation. Urol Int 31:108-110.

Emil A. Tanagho, MD

EA Tanagho: Urethrosphinteric reconstruction for congenitally absent urethra. J urol 116:237-242.

EA Tanagho: Colpocystourethropepy: The way we do it. J Urol 116:751-752.

1977

O Salvatierra, Jr and EA Tanagho: Reflux as a cause of end stage kidney disease: Report of 32 cases. J Urol 117:441-443.

*H Bruschini R, Hattner, MD Okerlund and EA Tanagho: Feasibility of localizing ectopic testes by 131I-labelled luteinizing hormone scintigraphy. Urology 9:657-659.

*JP Heine, RA Schmidt and EA Tanagho: Intraspinial sacral root stimulation for controlled micturition. Invest Urol 15:78-82.

EA Tanagho and U Jonas: Membrane catheter: Effective for recording pressure in lower urinary tract. Urology 10:173-176.

H Bruschini and EA Tanagho: Cystostomy drainage: Its efficacy in preventing residual urine and infection. J Urol 118:391.

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Emil A. Tanagho, MD

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Dr. Tanagho's extensive research activity covers a broad base of urologic pathology. His basic work started in London (1962) at the Institute of Urology, where he elucidated the anatomical structure and physiologic function of the urethrovesical junction, bladder neck and urethra. For the first time, dissection under magnification was used to study these critical segments of the urinary tract, demonstrating beyond any doubt the course and anatomical relationships of various muscle bundles and leading to a clear understanding of their physiologic function.

This work was continued (1963) at the Department of Urology, University of California School of Medicine, San Francisco, where multilateral physiologic studies of the function of the urethrovesical junction and trigone were carried out. This was the first comprehensive study of the physiology of this vital segment of the lower urinary tract. At its completion this work became a classic and has not been disputed since. Dr. Tanagho then embarked on the study of the anatomy of the bladder neck and of the urethra, specifically of its sphincteric mechanism, applying the same basic techniques as those used for the study of the urethrovesical junction. This study revealed several important anatomical facts about the fine structure of the sphincteric mechanism, establishing the proper anatomical morphology of the urinary sphincter.

Subsequently, studies were done of the dynamics of the bladder neck and the urethral sphincteric mechanism to understand the basic physiology of micturition. Cinefluoroscopy and multiple simultaneous pressure recordings provided clear insight into the

basic mechanism of interaction between bladder and urethral sphincter. This work was followed by the development of a comprehensive means of urodynamic study for evaluation of the lower urinary tract. This method became applicable to a variety of urologic disorders and made UCSF one of the leading institutions in the world for the understanding, study and evaluation of such problems. Clinical application ensued, mainly a new surgical technique for the repair of total urinary incontinence by sphincteric reconstruction, utilizing specific segments of the bladder wall—first done in 1970. This has become the classic technique applied by many institutions for correction of total urinary incontinence, especially after prostatectomy.

Pediatric urologic problems also have been the subject of Dr. Tanagho's studies: the pathophysiology of functional ureteral obstruction (in which it was proved that the derangement is primarily muscular rather than neurogenic); peristaltic activity of the ureter and the effect of intrinsic and extrinsic autonomic innervation in relation to ureteral function; repair of epispadias and bladder exstrophy (techniques that are now accepted world-wide).

Pioneering intrauterine fetal surgery in the lab, mimicking common congenital anomalies, was developed at our institution in the early 1970s to investigate the correlation between developmental ureteral pathology and kidney function. Intrauterine ureteral obstruction was developed at the level of the ureteropelvic junction; in addition bladder outlet obstruction was initiated at midterm. These studies were followed through the animals' pregnancy until delivery, and the pathologic changes were evaluated to establish the correlation between congenital obstruction, with or without vascular ischemia, and renal development and dysplasia. The information accumulated is now the foundation for intrauterine correction of such congenital anomalies.

In the last 20 years, Dr. Tanagho's research activity has focused on the feasibility of controlling micturition by electrical stimulation of the spinal cord or the sacral roots. This work has been continuously supported by an NIH contract and then by an NIH grant (#1 R01 NS 18029). This multilateral project involves basic neurophysiologic and neuroanatomic studies.

Detailed anatomic mapping of the neural connections to the lower urinary tract and genital tract has been established by the technique of retrograde transport of horseradish peroxidase; this protein, once injected into a site, is transported along the nerve's axons to its motoneuron cells. Step by step, we were able to outline the entire neuroanatomic chain controlling micturition, as well as sexual function and lower gastrointestinal tract function. The possibility of sacral root stimulation by identifying the root and isolating the autonomic fibers from the somatic fibers, then implanting tiny electrodes around the autonomic fibers for the purpose of controlling micturition has been explored repeatedly in animals and has proved successful. From our extensive and detailed work, we have been granted permission to apply this method of induced micturition to humans. To date thirty-five such patients have been treated. Overall the success rate is about 70%.

A dividend of this neural stimulation study is the attempt to control sexual function and erection by identifying the specific autonomic nerve fibers controlling this complex mechanism and then triggering the erectile response via electrode implantation. We developed both canine and simian models in which an erection pacemaker was implanted on the cavernous nerves after they had been isolated surgically. In these animals we induced well sustained erection. In addition, we established the first chronic animal model that permits complete evaluation of erection hemodynamically as well as neurophysiologically and radiographically. Exploration of the potential application of electro-erection to man is underway.

Neural stimulation studies opened the door to the management of a large segment of urologic patients who are crippled by a variety of voiding dysfunctions, as the studies revealed that many patients who have functional voiding disorders can recover normal voiding patterns through sacral root stimulation. Percutaneous testing and temporary electrode placement permit proper assessment of those patients who might benefit from permanent implantation. This new approach has been tested in clinical studies for the FDA in many centers in the states as well as overseas and now is currently accepted and widely used. This work resulted in eight issued U.S. patents; three are currently licensed to industry for the purpose of testing and FDA approval.

Owing to the significance of the neural stimulation research, Dr. Tanagho has been the recipient of the Jacob K. Javits Neurosciences Award for the last 10 years—the only urologist to be so honored. Dr. Tanagho also has been awarded honorary membership in the Urologic Society of Czech-slovakia, the Egyptian Urologic Society, Urologic Society of Australasia, All Union Association of Urology, USSR, German Urological Association, and the Urologic Society of Japan.

Recently, Dr. Tanagho has been interested in the regenerative power of the urinary bladder as it is enhanced by an acellular matrix graft. Preliminary studies reveal that, when acellular matrix is grafted on top of the bladder base after subtotal cystectomy, this becomes completely remuscularized within 2-3 months and the regenerated tissue assumes all the characteristics of a normal bladder wall. It also attracts autonomic innervation; functional studies reveal that the regenerated bladder is essentially identical to the normal bladder in its responses and functional properties. This work is in its infancy, but it has tremendous potential for clinical

Emil A. Tanagho, MD

application—not only to augment the bladder but also to replace segments in the urethra or the ureter by accelerating the normal regenerative process. This approach, if fully successful, will revolutionize urologic reconstructive surgery.